

# Semper Fit Nutrition



# Objectives

- ✓ Discuss the USDA Guidelines and Food Guide Pyramid
- ✓ Learn how to determine your daily requirements of carbohydrates and proteins
- ✓ Understand how to read a food label
- ✓ Make healthy food choices in your diet
- ✓ Make effective food choices during training



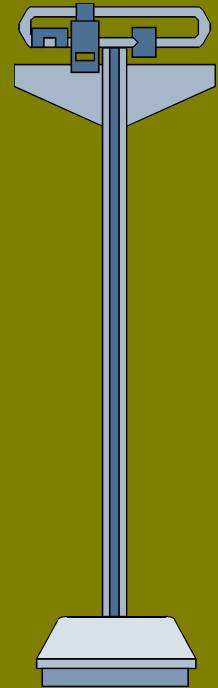
# Energy Balance

Calories Eaten - Calories  
Burned



Positive = weight gain

Negative = weight loss



# Calculating Your BMR

	<u>Age</u>	<u>Equation</u>
<b>Men:</b>	<b>18-30</b>	<b><math>6.95 \times \text{body weight (lbs)} + 679</math></b>
	<b>30-60</b>	<b><math>5.27 \times \text{body weight (lbs)} + 879</math></b>
<b>Women:</b>	<b>18-30</b>	<b><math>6.68 \times \text{body weight (lbs)} + 496</math></b>
	<b>30-60</b>	<b><math>3.95 \times \text{body weight (lbs)} + 829</math></b>

**Your BMR is \_\_\_\_\_kcal/day.**



# Estimate Your Activity Factor

<u>Level</u>	<u>Activity Factor</u>	
Very light	Seated and standing activities, driving	1.2
Light	Walking, sailing, bowling, light stretching	1.4
Moderate	Jogging, aerobic dance, light swimming	1.6
Strenuous	Stairmaster, running, racquet sports	1.9
Exceptional	Running or swimming races, cycling uphill	2.3



# Estimated Energy Requirement

Energy needs = \_\_\_\_\_ × \_\_\_\_\_  
BMR Activity Factor

Your EER = \_\_\_\_\_ kcal/ day.



# Body Mass Index

Your BMI = \_\_\_\_\_  $\times$  705  $\div$  (\_\_\_\_\_)<sup>2</sup> = \_\_\_\_\_

—.

body weight(lbs)

height (in)

ratio

Ratio

Classification

<20

Underweight

20-25

Normal

25-30

Overweight

>30

Obese



# Waist-to-Hip Ratio

**Your WHR =** \_\_\_\_\_  $\div$  \_\_\_\_\_ **=** \_\_\_\_\_  
ratio waist circ. (in) hip circ. (in)

## Standards for Waist-to-Hip Ratios

Men: <0.95

Women: <0.80





# The Nutrients

## Macronutrients

Carbohydrates  
Proteins  
Fats

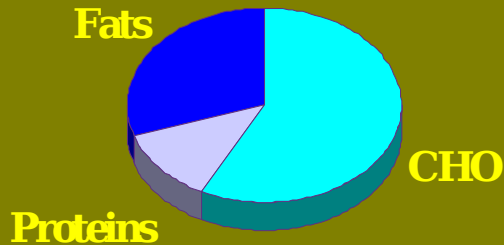
## Micronutrients

Vitamins  
Minerals  
Water



# CHO (Carbohydrate) Requirements

\_\_\_\_\_  $\times$  0.55 = \_\_\_\_\_ kcal from  
CHO/day.  
Your EER



\_\_\_\_\_  $\div$  4 kcal/g = \_\_\_\_\_ grams  
CHO/day.  
kcal from CHO



# 2 Types of Carbohydrates

## Simple Carbohydrate

✓ ~~S~~ Cake

✓ Candy

✓ Soda

## Complex Carbohydrate

✓ ~~S~~ Whole Grains

✓ Fruits

✓ Beans



# Carbohydrate Uses

- ✓ Provides energy in the form of glucose
- ✓ Provides fuel for the brain
- ✓ Acts as building blocks for chemicals needed by the body
- ✓ Repairs tissue damage in the body



# Protein Uses

- ✓ Forms muscle, hair, nails, skin, and other tissues
- ✓ Provides energy
- ✓ Repairs injuries
- ✓ Carries fats, vitamins and minerals to different parts of the body
- ✓ Contracts muscle
- ✓ Serves a structural role for every part of the body



# Protein Requirements

## Determining your Protein Factor:

Grams of Protein Per Pound of Body Weight

<u>Activity Level</u>	<u>Protein Factor</u>
Low to Moderate	0.5 grams
Endurance Training	0.6-0.8 grams
Strength Training	0.6-0.8 grams

## Protein Requirements:

\_\_\_\_\_ × \_\_\_\_\_ = \_\_\_\_\_ grams of  
protein/day

Body wt (lbs) Protein Factor



# Fat's Purpose

- ✓ Line and insulate the nerves of the brain and body
- ✓ Protect and cushion the body
- ✓ Aid in the manufacturing of antibodies
- ✓ Carry certain vitamins through the body



# Determine Your Max Fat Limit

\_\_\_\_\_  $\times$  0.30 = \_\_\_\_\_ kcal of fat /day.  
Your EER

\_\_\_\_\_  $\div$  9 kcal/gram = \_\_\_\_\_ grams of fat /day.  
kcal of fat





# Micronutrients

- ✓ Vitamins
  - Fat soluble
  - Water soluble
- ✓ Minerals
- ✓ RDA (Recommended Daily Allowance)



# Retaining Vitamins

- ✓ Cook food in just enough water to prevent burning, do not soak
- ✓ Cook vegetables only until they are crisp and tender
- ✓ Steam or stir-fry foods to retain the most vitamins
- ✓ Use leftover cooking water for preparing soups and sauces
- ✓ Cut and cook vegetables shortly before serving or store them in an airtight container



# What Effects Your Ability to Absorb Minerals?

- ✓ Presence of other dietary constituents
- ✓ Medications
- ✓ Body's need for the mineral
- ✓ Mineral's chemical form
- ✓ Integrity of the intestinal tract



# Water's Role

- ✓ Digests and absorbs nutrients
- ✓ Excretes wastes
- ✓ Maintains blood circulation throughout the body
- ✓ Maintains body temperature



# Daily Water Requirement

## Calculate your Water Loss Limit:

A 2% loss in body weight due to fluid loss equals:

$$\frac{\text{Your body weight}}{\text{Your body weight}} \times 0.98 = \text{lbs.}$$

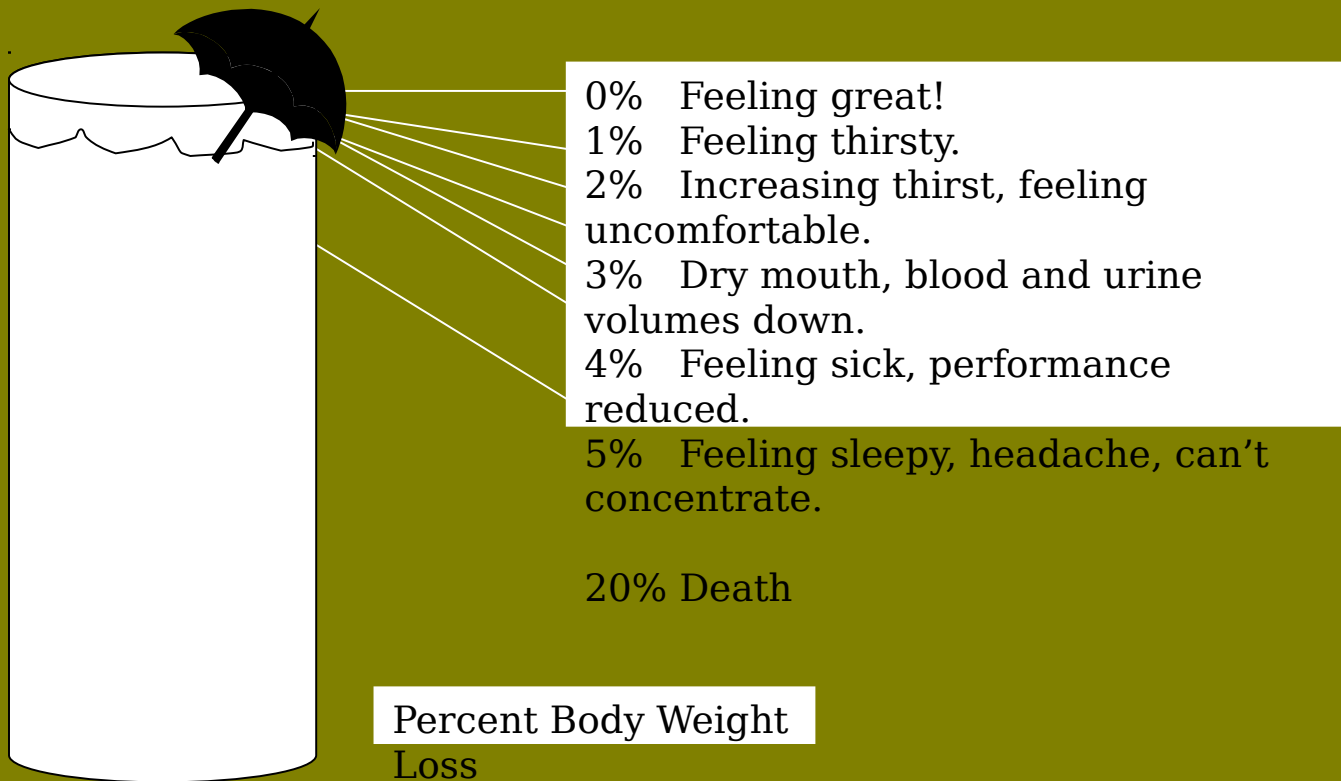
**Stay  
Above  
This  
Weight!!!**

## Calculate your Daily Water Requirement:

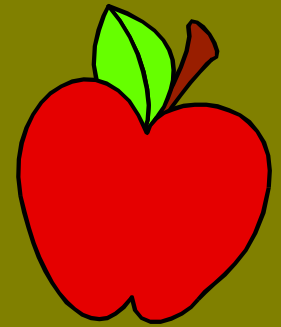
$$0.5 \times \frac{\text{body weight (lbs)}}{\text{body weight (lbs)}} \div 8 \text{ oz. per cup} = \text{cups per day.}$$



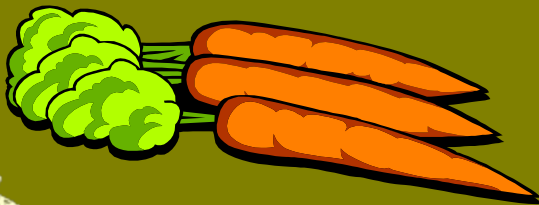
# Symptoms of Dehydration



# Eating for Optimal Health & Fitness



You are what you eat



# Dietary Guidelines

- ✓ Aim for a healthy weight
- ✓ Be physically active each day
- ✓ Let the Pyramid guide your food choices
- ✓ Choose a variety of grains daily
- ✓ Choose a variety of fruits and vegetables daily





# More Dietary Guidelines

- ✓ Keep food safe to eat
- ✓ Choose a diet low in saturated fat and cholesterol, and moderate in total fat
- ✓ Moderate your intake of sugars
- ✓ Choose and prepare foods with less salt
- ✓ Drink alcoholic beverages in moderation



# Keeping Food Safe

- ✓ Keep it fresh
- ✓ Keep it clean
- ✓ Cook it thoroughly



# Eat a Variety of Foods



**The Food Guide Pyramid**



# Serving Sizes

Food Group	Serving Size
Bread, Cereal, Rice, Pasta & Grains	1 slice of bread, $\frac{1}{2}$ cup cooked rice or pasta, 1 oz. breakfast cereal, $\frac{1}{2}$ bagel
Vegetables	1 cup leafy vegetables, $\frac{1}{2}$ cup raw or cooked Vegetable, $\frac{3}{4}$ cup vegetable juice
Fruits	1 medium size fruit, $\frac{1}{2}$ cup canned fruit, $\frac{3}{4}$ cup of 100% fruit juice, $\frac{1}{4}$ cup dried fruit
Milk, Yogurt & Cheese	1 cup milk or yogurt, 2 oz. cheese
Meat, Poultry, Fish, Dry Beans, Eggs, Nuts	3 oz. lean meat, poultry, fish, 1 egg, 2 Tbsp peanut butter, $\frac{1}{2}$ cup cooked beans.
Fats, Oils, Sweets	1 tsp oil, 1 pat of butter, 1 Tbsp salad dressing or sour cream



# Suggested Servings

Total Daily Kcals	Bread	Vegetables	Fruits	Meats	Milk	Fat Grams
1,400	6	4	3	2	2	<47
1,600	7	5	4	2	2	≤53
1,800	8	5	4	2	3	≤60
2,000	10	5	4	2	3	≤67
2,200	11	5	4	3	3	≤73
2,400	12	6	5	3	3	≤80
3,000	15	6	6	3	3	≤100

Adapted from *Navy Nutrition and Weight Control Self-Study Guide*, NAVPERS 15602A 1996, p 44.



Serving size reflects the typical amount of the food that many people eat.

The list of nutrients displays the amount in one serving of the food.

Ingredients are listed from the most to the least abundant items found in the food.



## Nutrition Facts

Serving Size 1 cup (228g)  
Servings Per Container 2

### Amount Per Serving

**Calories** 260      **Calories from Fat** 120

### % Daily Values\*

**Total Fat** 13g      **20%**

Saturated Fat 5g      **25%**

**Cholesterol** 30mg      **10%**

**Sodium** 660mg  
28%

**Total Carbohydrates** 31g      **10%**

Dietary Fiber 0g      **0%**

Sugars 5g

**Protein** 5g

Vitamin A 4%

Vitamin C 2%

Calcium 15%

Iron 4%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	
		300mg	
Sodium	Less than	2,400mg	
		2,400mg	

Total Carbohydrate 300g

### Ingredients:

Dietary Fiber 25g 30g

Calories per gram:

Fat 9      Carbohydrates 4      Protein 4

The % Daily Values are based on a 2,000 kcal diet. Use the number to compare the amount of nutrients found in various foods.

Percentage of the daily vitamin and mineral recommendation that is met in one serving of the food.

# Nutrition “Buzzwords”

LOWFAT

Cholesterol Free *Light*  
Lowfat Free  
Fat Free

**What do they really mean?**



# Milk Comparison Table

## Skim Milk Whole Milk

Calories	85	157
Carbohydrates	12g	11g
Protein	8g	8g
Fat	0g	9g
Calcium	303mg	290mg





# Healthy Eating Out

- ✓ Choose baked, broiled, steamed, poached, smoked, roasted, grilled, flame-cooked, or in a marinara sauce.
- ✓ Order green salads, plain potatoes and rice. Ask for condiments “on the side”.
- ✓ Trim all visible fat off of meat.
- ✓ Eat plain rolls, breadsticks or crackers instead of biscuits, chips or nuts as an appetizer.
- ✓ Avoid fried, breaded, battered, flaky, crispy, creamy, au gratin, puffed, loaded, or tempura.
- ✓ Limit alcohol consumption.



# Healthy Snacking

- ✓ Stock foods like plain popcorn, dried fruits, whole grain crackers, pretzels, unsweetened fruit juices, fresh produce, and low-fat yogurt.
- ✓ Snack on fresh fruits or vegetables with low-fat peanut butter or low-fat cheese spreads.
- ✓ Make a snack mix with wheat, rice, and corn ready-to-eat cereals.



# Nutrition Throughout Life

- ✓ Identify times when energy needs are changing
  - change in activity level
  - pregnancy, etc
- ✓ Eat the appropriate servings of each food group
- ✓ Make healthy food choices even when eating out



# Nutrition & Exercise



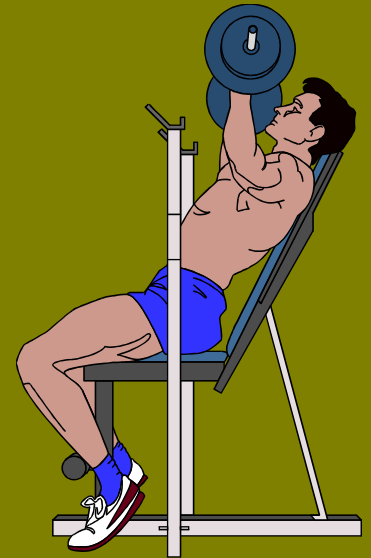
# Failure to Eat Enough Carbohydrates Can Lead to:

- ✓ Chronic muscular fatigue
- ✓ A feeling of staleness
- ✓ Weight and muscle mass loss
- ✓ Poor sleep patterns



# Carbohydrates for Training

- ✓ Endurance training
  - 60-65% of daily caloric intake
  - Carbohydrate loading
- ✓ Strength training
  - 55-60% of daily caloric intake
  - No “Carbo” loading



# Daily Carbohydrate Needs

\_\_\_\_\_ × **0.60** = \_\_\_\_\_ kcal from CHO per day.  
Your EER\*

\_\_\_\_\_ × **0.65** = \_\_\_\_\_ kcal from CHO per day.  
Your EER\*

**You should eat \_\_\_\_\_ to \_\_\_\_\_ kcals from CHO daily.**

\* Your estimated energy requirement (EER) was calculated on the *Know Yourself* handout.



# Daily Protein Needs

**Body Weight = \_\_\_\_\_ lbs.**

**0.6 grams/lb × \_\_\_\_\_ lbs = \_\_\_\_\_ grams proteins.**  
**Body wt**

**0.8 grams/lb × \_\_\_\_\_ lbs = \_\_\_\_\_ grams proteins.**  
**Body wt**

**Your daily protein grams = \_\_\_\_\_ to \_\_\_\_\_.**





# Vitamin & Mineral Needs

- ✓ Eat according to the Food Guide Pyramid
- ✓ Eat more fruits and vegetables
- ✓ Antioxidants
  - protect from environmental stressors
  - accelerate recovery from exhaustive exercise



# Getting Enough Fluid

- ✓ Drink 16 oz (2 cups) of fluid two hours before starting exercise.
- ✓ Drink 3 to 4 oz. of fluid every 15-20 minutes during exercise.
- ✓ Weigh yourself before and after exercise. Drink 16 oz of fluid for every pound of weight lost.
- ✓ Do not rely on thirst as an indicator of fluid needs.
- ✓ Drink a sports drink with 5-8% carbohydrates and electrolytes when exercising longer than 60 minutes.
- ✓ Monitor your urine.



# Deciding What to Drink

- ✓ Tastes good
- ✓ Does not cause gastrointestinal or stomach discomfort
- ✓ Rapidly absorbed from your gut
- ✓ Contains electrolytes and 5-8% carbohydrates for prolonged or strenuous exercise
- ✓ Non-caffeinated, non-carbonated, non-alcoholic beverage



# Overhydration

- ✓ Less common than dehydration
- ✓ Can be life-threatening
- ✓ Decreased electrolyte levels
- ✓ Prevent by replacing electrolytes with food and carbohydrate drinks



# Nutrition for Exercise Recovery

- ✓ 50g of carbohydrates within 30 min of exercise
- ✓ Snack on high-carbohydrate foods for up to 6 hours after exercise
- ✓ Helps restore muscle glycogen for the next exercise session



# Supplements and Performance

- ✓ **Nutritional supplement** - a nutrient taken in addition to your diet
- ✓ **Ergogenic agent** - a substance taken with the intent of improving physical performance



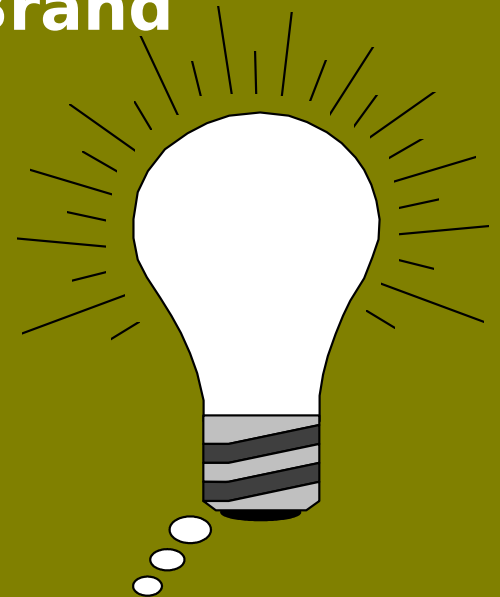
# When Are They Useful?

- ✓ You have an existing vitamin or mineral deficiency
- ✓ You have poor dietary habits
- ✓ You are in extreme environmental conditions



# Understand Before You Buy

- ✓ **Amount of Nutrients**
- ✓ **Natural Versus Synthetic Vitamins**
- ✓ **Additives**
- ✓ **Store Brands Versus Name Brand**
- ✓ **Disintegration Rate**
- ✓ **Expiration Dates**
- ✓ **Stress tablets**
- ✓ **No Iron for Men**





# Nutritional Ergogenic Agents

- ✓ Energy Enhancers
- ✓ Fat Burners
- ✓ Growth Hormone Releasers
- ✓ Glycogen Sparers
- ✓ Intracellular Buffers
- ✓ Testosterone Enhancers
- ✓ Miscellaneous



# Energy Enhancers

- ✓ Claim: Improves performance by increasing energy
- ✓ Reality: No demonstrated benefits in healthy people. Potential side effects.



# Fat Burners

- ✓ Claim: Reduces body fat and increases lean mass
- ✓ Reality: Benefits range from nonexistent to questionable to inconclusive with various side effects.



# Growth Hormone Releasers

- ✓ Claim: Promotes muscle growth through an increase in growth hormone release
- ✓ Reality: Some have shown benefits. Most have negative side effects.



# Glycogen Sparers

- ✓ Claim: Increases energy and endurance, and reduces fatigue
- ✓ Reality: Some demonstrated benefits with varied effects and potentially uncomfortable side effects.



# Intracellular Buffers

- ✓ Claim: Delays fatigue and increases aerobic capacity by buffering potentially harmful metabolic byproducts
- ✓ Reality: Have shown questionable to moderate benefits with GI related side effects.



# Testosterone Enhancers

- ✓ Claim: Increases testosterone levels, leading to more lean muscle mass
- ✓ Reality: Little to no benefits in those that are not banned. Known side effects.



# Miscellaneous

- ✓ Includes a wide variety of health claims, risks, and benefits
- ✓ Reality: Results vary. Most require more research.





# Ergolytic Agents

- ✓ Alcohol - Causes severe dehydration and decreases performance
- ✓ Amphetamines - Increases heart rate and blood pressure; may cause dizziness, stomach upset, irritability, insomnia, and death
  - Banned by the military!!
- ✓ Tobacco - Increases heart rate and blood pressure, leading to decreased performance; long term health risks



# Summary

- ✓ Use the handouts
- ✓ Ask questions
- ✓ Be aware



**Eat better. Feel  
Stronger. Accomplish  
more!**

